

Application No. 09/743,818
Response to Office Action dated 05/16/2006
September 18, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-92. Canceled.

93 (Currently Amended). A method of reducing the susceptibility of tropoelastin to cleavage by thrombin, kallikrein or serum according to claim 46, wherein the arginine residue corresponding to 515 of SEQ ID NO:4 is replaced with alanine.

Claims 94-111. Cancelled.

112 (Currently Amended). A method of reducing the susceptibility of tropoelastin to thrombin cleavage comprising according to claim 98 wherein replacing the alanine at any one of residues 593, 595, 596 or 597 of SEQ ID NO:4 ~~is replaced~~ with another amino acid.

113 (Previously Presented). A method according to claim 112, wherein the alanine corresponding to residue 593 of SEQ ID NO:4 is replaced with another amino acid.

Claim 114. Cancelled.

115 (New). A method of reducing the susceptibility of tropoelastin to proteolysis by thrombin, kallikrein or serum, comprising mutating one or more of the amino acid residues of the amino acid sequence RAAAG in the tropoelastin, so that susceptibility of the tropoelastin to cleavage by thrombin, kallikrein or serum is reduced.

116 (New). The method of claim 115, wherein the tropoelastin has the amino acid sequence of SEQ ID NO: 4 or 5.

117 (New). The method of claim 116, wherein the amino acid sequence RAAAG is the amino acid sequence at position 515 to position 519 of SEQ ID NO: 4 or 5.

118 (New). The method according to claim 115 wherein one amino acid residue in the amino acid sequence RAAAG is mutated.

119 (New). The method according to claim 115, wherein the arginine residue of the amino acid sequence RAAAG is mutated.

120 (New). The method of claim 115, wherein the arginine residue of the amino acid sequence RAAAG is replaced with an alanine residue.

121 (New). The method of claim 115, wherein the arginine residue of the amino acid sequence RAAAG is replaced with a leucine residue.

122 (New). The method of claim 115, further comprising mutating one or more of the amino acid residues of the amino acid sequence corresponding to SEQ ID NO: 8 of SEQ ID NO: 4 or 5, to thereby further reduce the susceptibility of the tropoelastin to cleavage by thrombin.

123 (New). The method of claim 115, wherein the tropoelastin has the amino acid sequence of SEQ ID NO: 4, and further comprising mutating one or more of the amino acid residues of the amino acid sequence corresponding to SEQ ID NO: 10 of SEQ ID NO: 4, to thereby further reduce the susceptibility of the tropoelastin to cleavage by kallikrein.

124 (New). The method of claim 115, further comprising mutating one or more of the amino acid residues of the amino acid sequence corresponding to SEQ ID NO: 14 of SEQ ID NO: 4 or 5, to thereby further reduce the susceptibility of the tropoelastin to cleavage by serum.

125 (New). The method of claim 115, wherein the tropoelastin has the amino acid sequence of SEQ ID NO: 4, and further comprising mutating one or more of the amino acid residues of the amino acid sequence corresponding to SEQ ID NO: 15 or 16 of SEQ ID NO: 4, to thereby further reduce the susceptibility of the tropoelastin to cleavage by serum.

126 (New). The method of claim 115, further comprising mutating one or more of the amino acid residues of the amino acid sequence corresponding to SEQ ID NO: 11 or 12 of SEQ ID NO: 4 or 5, to thereby reduce the susceptibility of the tropoelastin to cleavage by plasmin.

127 (New). The method of claim 115, wherein the tropoelastin has the amino acid sequence of SEQ ID NO: 4, and further comprising mutating one or more of the amino acid residues of the amino acid sequence corresponding to SEQ ID NO: 13 of SEQ ID NO: 4, to thereby reduce the susceptibility of the tropoelastin to cleavage by gelatinase B.

128 (New). A method of reducing the susceptibility of tropoelastin to proteolysis by thrombin, kallikrein or serum, consisting of mutating one or more of the amino acid residues corresponding to position 515 to 521 of SEQ ID NO: 4 in the tropoelastin, so that susceptibility of the tropoelastin to cleavage by thrombin, kallikrein or serum is reduced.

129 (New). The method of claim 128, wherein the amino acid residue at position 515 is arginine and is mutated.

130 (New). The method of claim 128, wherein the amino acid residue at position 515 is arginine and is replaced with alanine or leucine.

131 (New). A method of reducing the susceptibility of tropoelastin to proteolysis by thrombin, kallikrein or serum protease, consisting of mutating arginine of the amino acid sequence RAAAGLG in the tropoelastin corresponding to position 515 to 521 of SEQ ID NO: 4, so that susceptibility of the tropoelastin to cleavage by thrombin, kallikrein or serum is reduced.

132(New). The method according to claim 131, wherein the R in the amino acid sequence RAAAGLG is mutated.

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133 (New). The method of claim 131, wherein the R in the amino acid sequence RAAAGLG is replaced with A or L.

134 (New). The method according to claim 131 wherein the tropoelastin is human tropoelastin.

135 (New). A tropoelastin molecule produced by the method of claim 115.